Rubber Band Banjo

Make a cool instrument and explore the physics of sound!

Kit contains:

- 4 Rubber Bands
- 1 Plastic plate
- 1 Jumbo craft stick

You will need: tape and materials for decorating (crayons, colored pencils, and/or stickers).

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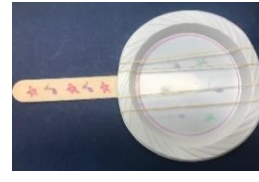
INSTRUCTIONS

Step 1. If you'd like a decorated banjo, color and/or sticker the plate and craft stick.

Step 2. Tape the craft stick to the back of the plate.

Step 3. Pull the rubber bands around the plate so that they are parallel.



Play your banjo by plucking or strumming the strings.

TRY THIS!

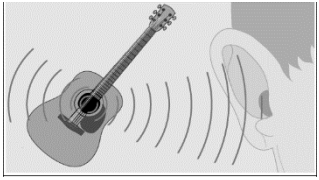
- Pluck the string lightly. Then pluck with a big movement. Does that change the sound?
- Hold down a string, and then pluck it. How does that change the sound?

- Watch this cool video for another simple sound experiment: “HooplaKidz Lab – How to See Sound” (https://youtu.be/BoeDI-YkzI0)

WHAT’S GOING ON?

Your banjo works like all string instruments (guitar, violin, banjo, etc.): when you pluck/strum the “strings,” they vibrate and make sound.

All sound is made by vibrations. When you pluck the “strings” of your rubber band banjo, you make them vibrate. The vibrating rubber band makes the air around it vibrate, sending sound waves through the air to your ear. The sound waves enter your ear and make your **ear drum** (a thin membrane in your ear) vibrate, which sends a signal to your brain and your brain understands the sound.



The sound can change if you make the “strings” of your banjo smaller, bigger, shorter, or longer.

This change in sound is called **pitch**. You can also change the sound by plucking softly or loudly. Putting more energy in (a big pluck) means more energy comes out through the sound wave vibrations.

This SciShow Kids video is a great, short explanation: "SciShow Kids – What is Sound?" (https://youtu.be/3-xKZKxXuu0)

LEARN MORE ABOUT IT!

Books (Available at MGPL):

- *Sound* by Carolyn Bernhardt
- *The Science of Sound and Music* by Shar Levine
- *Sound* by Joseph Midthun
- *Science Magic with Sound* by Chris Oxlade
- *Sounds All Around* by Wendy Pfeffer
- *Experiments in Light and Sound with Toys and Everyday Stuff* by Natalie Rompella
- *Oscar and the Bat: A Book About Sound* by Geoff Waring